

over claims 6, 7, 27, 28 and 41-43 of Applicants' U.S. Patent No. 6,740,174, to which this application claims benefit pursuant to 35 U.S.C. § 120.

Claims 1-55 were also rejected as obvious under 35 U.S.C. § 103(a) based on Uematsu et al (U.S. Patent No. 5,302,214).

For at least the following reasons, Applicants submit that each of claims 1-55 is allowable over the references of record. Accordingly, Applicants respectfully request that the previous rejections be withdrawn and a Notice of Allowability be issued.

I. Obviousness-type Double Patenting

A terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) is submitted herewith.

Applicants contend that each of the pending claims is patentably distinct from the claims present in U.S. Patent No. 6,740,174. However, to expedite Allowance of this application, Applicants submit the above-noted terminal disclaimer and thereby overcome the rejection based on obviousness-type double patenting.

Accordingly, withdrawal of the previous rejection of claims 1-55 based on obvious-type double patenting is respectfully requested.

II. Obviousness

The Examiner contends in the last Office Action that all of claims 1-55 are obvious over the disclosure of U.S. Patent No. 5,302,214 ("UEMATSU").

However, the presently claimed invention cannot be obvious over UEMATSU because UEMATSU explicitly teaches directly away from what Applicants claim.

The Federal Circuit has explained that an obviousness rejection can be rebutted by showing that the prior art in any material respect taught away from the claimed invention. In re Haruna, 249 F.3d 1327, 1335, 58 USPQ2d 1517, 1522 (Fed. Cir. 2001). The Court further explained that a reference teaches away when a person of ordinary skill in the art, upon reading the reference, "would be led in a direction divergent from the path that was taken by the applicant." Id.

In this case, the explicit teachings of UEMATSU would have led one of ordinary skill in a direction divergent from the path taken by Applicants.

For example, the Examiner correctly recognizes in paragraph 7 of the last Office Action that UEMATSU teaches the presence of Tungsten at a concentration that is not more than 1.5%, whereas all of the pending claims explicitly require Tungsten at a concentration of more than about 2%. To bridge that distinction between the claimed concentration and the prior art, the Examiner concludes without supporting evidence or

reasoning that Applicants' higher and non-overlapping concentration range would not be a patentable distinction, notwithstanding the fact that Applicants' Tables 1 and 2 demonstrate that the values of high-temperature strength for Steel Nos. 22, 23 and 25, which include more than 2% Tungsten as claimed, are higher than the values, for example, for Steel Nos. 1-12, which do not.

However, Applicants' claimed range of more than 2% cannot be obvious over UEMATSU because UEMATSU explicitly teaches away from providing Tungsten at a concentration that is any greater than 1.5%.

At column 2, lines 16-33, UEMATSU states that at temperatures of 900° C and higher, known ferritic steels exhibit lost strength, fatigue cracking and abnormal oxidation. UEMATSU goes on to state that addition of alloying elements to increase high temperature strength is to be avoided because increased alloying elements "steeply" weaken impact toughness and "remarkably" worsen weldability and workability. See column 2, lines 25-33. UEMATSU teaches that Tungsten is an example of such an alloying element. See column 6, lines 57-58.

Rather than choosing high-temperature strength at the expense of weldability and workability, UEMATSU states that the disclosed invention is to "provide a ferritic stainless steel having properties which simultaneously meet the above-mentioned

many severe conditions" See column 2, lines 63-66. For that reason, UEMATSU explicitly requires a Tungsten concentration of 1.5% or less. See column 6, lines 58-60.

Contrary to UEMATSU's instruction, Applicants require a Tungsten concentration of more than 2%. Thus, with respect to Tungsten concentration, UEMATSU explicitly directs one of ordinary skill in the art away from the path taken by Applicants. Moreover, because UEMATSU teaches that increasing Tungsten concentration to greater than 1.5% would "steeply" weaken impact toughness and "remarkably" worsen weldability and workability, such a modification would defeat UEMATSU's stated fundamental purpose - to "simultaneously" meet all the demands of high-temperature use.

For the foregoing reasons, one of ordinary skill in the art, upon reading the disclosure of UEMATSU, would be directed not to do what Applicants have done - increase the Tungsten concentration to more than 2%. Accordingly, the present claims are neither disclosed nor fairly suggested by the opposite teaching of UEMATSU.

Just as UEMATSU teaches one of ordinary skill in the art not to increase the Tungsten concentration to the presently claimed levels, UEMATSU also teaches not to lower the Chromium concentration to the presently claimed levels.

Specifically, UEMATSU states that "[t]he reason of limiting Cr as not less than 17% is that the addition of at least

17% of Cr is required to keep a desired level of oxidation resistance at a temperature of at least higher [than] 900° C." See column 5, lines 57-62 (emphasis added).

Because UEMATSU explicitly states that the fundamental objective of the disclosed material is to simultaneously satisfy the desired high temperature properties, including both high temperature strength and oxidation resistance, UEMATSU categorically teaches away from reducing the Chromium content to less than 17%. As with UEMATSU's Tungsten concentration, departure from UEMATSU's explicit lower limit for Chromium would defeat UEMATSU's explicitly stated fundamental purpose of the disclosed material.

Thus, one of ordinary skill in the art, upon reading the disclosure of UEMATSU, would be directed not to do what Applicants have done - decrease the Chromium concentration to 16% or less. Accordingly, the present claims are neither disclosed nor fairly suggested by the opposite teaching of UEMATSU.

Although pending claims 1-55 are allowable over UEMATSU based on either UEMATSU's oppositely directed Tungsten concentration or its oppositely directed Chromium concentration, Applicants note that the pending claims are even more clearly allowable over UEMATSU because they require both a Tungsten concentration and a Chromium concentration that UEMATSU explicitly rejects.


For all of the foregoing reasons, Applicants respectfully request that the Examiner withdraw the previous rejections and issue a Notice of Allowability with respect to all of pending claims 1-55.

Should there be any matters that need to be resolved in the present application, the Examiner is invited to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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APPENDIX:

The Appendix includes the following item(s):

- ☒ - a terminal disclaimer
- ☐ - a 37 CFR 1.132 Declaration
- ☐ - a new or amended Abstract of the Disclosure
- ☐ - a Replacement Sheet for Figure of the drawings
- ☐ - a Substitute Specification and a marked-up copy of the
originally-filed specification
- ☐ - a verified English translation of foreign priority document